

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-34 are presently active in this case, Claims 1, 12, 23, and 34 having been amended by way of the present Amendment.

Care has been taken such that no new matter has been entered. Support for the claim amendments is evident from the originally filed application, including the drawings, written description, and claims. The original application clearly disclosed embodiments having the features present in the amended claims. The Applicant respectfully requests the entry of the amendments as they are believed to place the application into condition for allowance or in better condition for appeal.

In the outstanding Official Action, Claims 1-3, 5, 6, 12-14, 16, 17, 23, 25, 27, 28, and 34 were rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda (U.S. Patent No. 6,285,470) in view of Fields (U.S. Patent No. 5,767,945). Claims 4, 15, and 26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda in view of Fields and Jin (U.S. Patent No. 5,880,858). Claims 7-9, 18-20, and 29-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda in view of Fields and Dhawan (U.S. Patent No. 5,271,064). Claims 10, 21, and 32 were rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda in view of Fields and Saito (U.S. Patent No. 5,966,455). Claims 11, 22, and 33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda in view of Fields and Allen (U.S. Patent No. 6,044,172). For the reasons discussed below, the Applicant requests the withdrawal of the obviousness rejections.

The basic requirements for establishing a *prima facie* case of obviousness as set forth in MPEP 2143 include (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, (2) there must be a reasonable expectation of success, and (3) the reference (or references when combined) must teach or suggest all of the claim limitations. The Applicants submit that a *prima facie* case of obviousness cannot be established in the present case because the references, either taken singularly or in combination, do not teach or suggest all of the claim limitations.

The Applicant respectfully submits that the cited reference, either when taken singularly or in combination, fail to teach or suggest edge-detection of a digital color original image obtained by digitally inputting only a single side of a document color-printed on both sides of paper, and estimating background color of the paper or background color image on the single side based solely upon edge-detection information with respect to a portion with low intensity of the detected edge, in the manner recited in Claims 1, 12, 23, and 34.

Each of Claims 1, 12, 23, and 34 recite inventions that include steps or apparatuses for edge detection using only a single side of a document printed on both sides, and estimation of background color on the single side based solely upon edge-detection information. Thus, the detected edge is an important aspect of the operation of the present invention. (See, e.g., Figure 5 of the present application.) However, the Applicant notes that neither the Matsuda et al. reference nor the Fields et al. reference describe or suggest features.

The Matsuda et al. reference describes an image reading apparatus that generates a histogram regarding the brightness distribution of the reading surface based on the image data

of the reading surface. The apparatus determines whether show-through exists on the reading surface depending on the difference between a mode brightness and a maximum brightness for preventing false detection of the base brightness cause by show-through effect. The Official Action seems to suggest that the Matsuda reference detects the entirety of characters or images during the processes performed thereby, and therefore the process of the Matsuda reference necessarily detects not only the non-edge portions of the characters (i.e. the portion of the character bounded by the edges), but also the edges of the characters. However, the Applicant respectfully submits that the Matsuda et al. reference does not limit the estimation of a background color of the paper or background color image on the single side based solely upon edge-detection information, in the manner recited in Claims 1, 12, 23, and 34 of the present application. In fact, as noted in the Official Action, the Matsuda reference does not even mention detection of the edges of the characters, and therefore clearly does not provide such an estimation based solely upon edge-detection information.

Additionally, the Applicant submits that the Matsuda reference does not disclose edge detection using only a single side of a document printed on both sides. For example, the Matsuda reference indicates that the invention described therein can utilize the technology disclosed by JPA 07-87295 in which the back image is used to produce a front image free from the show-through effect. (See column 9, lines 17-23, and column 1, lines 56-67.)

The Applicant submits that the Fields reference does not supplement the deficiencies discussed above in the teachings of the Matsuda reference with respect to the limitations of Claims 1, 12, 23, and 34 of the present application. In fact, the Fields reference does not relate to show-through detection and removal, and the Fields reference does not describe edge

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detection and utilization in the manner set forth in the independent claims of the present application. The Fields reference clearly does not disclose steps or apparatuses for edge detection using only a single side of a document printed on both sides, and estimation of background color on the single side based solely upon edge-detection information.

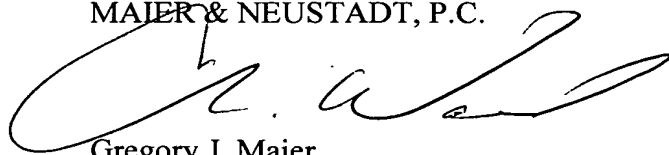
Accordingly, the Applicant respectfully requests the withdrawal of the obviousness rejections of Claims 1, 12, 23, and 34.

Claims 2-11, 13-22, and 24-33 are considered allowable for the reasons advanced for Claims 1, 12, and 23 from which they respectively depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed, taught, nor suggested by the applied references when those features are considered within the context of Claims 1, 12, and 23.

Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Registration No. 25,599
Attorney of Record

Christopher D. Ward
Registration No. 41,367

Customer Number

22850

Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 10/01)

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